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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,135	08/28/2003	Tetsurou Hamada	00682P0072US	6331
32116 7590 11/30/2007 WOOD, PHILLIPS, KATZ, CLARK & MORTIMER 500 W. MADISON STREET SUITE 3800 CHICAGO, IL 60661			EXAMINER MILLER, CARL STUART	
			ART UNIT 3747	PAPER NUMBER
			MAIL DATE 11/30/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/650,135

Applicant(s)

HAMADA ET AL.

Examiner

Carl S. Miller

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 6-15, 17 and 21-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan ('141) in view of Kessler.

Japan ('141), at Figures 1 and 2, teaches the overall system now claimed including the solenoid-operated spill valve in the fuel return line. No casing for the valve is shown however the structure includes both a check valve on the inlet to the valve and an accumulator upstream of the valve.

Kessler applies as per the rejection of Claim 1 in the last office action and further teaches an inlet fitting for the valve on the side of the casing of the valve. Also, a seal is shown that would imply some type of outlet fitting on the case to feed the fuel into the manifold.

It would have been obvious to modify Japan ('141) by using a top fed injector as the spill valve in the return line since the spill valve of Japan functioned as the injector of Kessler functions and both were used in fuel injection control situations.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kessler and Japan ('141) as applied to claim 1 above, and further in view of Mizushima.

Mizushima teaches the use of a grommet (412) located between two casing members for an injector wherein each casing piece includes an indentation to locate the grommet when the casing halves are put together.

It would have been obvious to modify Japan ('141) as noted above and to locate the wiring to the injector as taught by Mizushima because the latter was also an intermittent injector located within a casing having two halves.

Claims 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan ('141) and Kessler as applied to claim 13 above, and further in view of Smith

Smith teaches the use of a vibration-isolating sleeve on an injector and the sleeve obviously has a stronger elastic force than a simple O-ring seal would have since it would not serve to isolate the injector from engine vibrations if it did not.

It would have been obvious to isolate the injector tip of Kessler as taught by Smith since vibrations from the engine would have been a problem even though the injection was manifold injection.

Applicant's arguments filed 9/07/07 have been fully considered but they are not persuasive. In particular, as noted in the interview summary of 8/1/07, the examiner does not believe that the valve (20) of Japan ('141) is necessarily a proportional flow orifice type valve simply because the valve is identified as a "proportional control valve." This designation can apply to a valve that is intermittently opened by a solenoid using pulse width modulation such that the flow **through the line** is proportional to the pulse width. Such a valve would be an intermittent valve as required by the claims. Furthermore, the ball valve shown in the drawing is not really set up to create

proportional flow since this is usually achieved via a needle valve or spool valve. To overcome the rejection the examiner requested the submission of a translation of the reference, but the applicant has not supplied such a translation. Therefore, the examiner has maintained his original interpretation of the teachings of Japan ('141).

With respect to the teaching within Kessler applied against Claim 13, Kessler teaches a casing created by elements (22) and (26). These elements surround an intermittently operating fuel valve. The housing and valve element of such a valve are already clearly shown in Figure 2 of Japan ('141). It would have been obvious to enclose the valve (20) within a casing as taught by Kessler.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl S. Miller whose telephone number is 703-308-2653. The examiner can normally be reached on MTWTHF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Cronin, can be reached at 571-272-4536. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Carl S. Miller/
Primary Examiner
Art Unit 3747